

plura basi foliolis 2-4 ellipticis vel elliptico-oblongis 2-3 cm. longis dentatis instructa, supra basin plus minusve lobata lobis apicem versus decrescentibus, supra medium indivisa, ceterum ut in foliis ramulorum floriferorum; petioli 1.5-3 cm. longi; stipulae lineari-lanceolatae, circiter 5 mm. longae, caducae. Inflorescentia paniculata ad 5 cm. longa, tenuiter villosula; axes secundarii racemosi, 1-3 inferiores foliis suffulti, infimus 5-9-florus pedicello infimo interdum 2-floro, apicem versus decrescentes; pedicelli 2-3 mm., in fructu ad 6 mm. longi; hypanthium extus et sepala triangulari-ovata acuminulata utrinque villosula; petala alba, oblonga, 9-10 mm. longa, obtusa, ad basin cuneatam supra lanata, apice sparse lanato-ciliosa; stamina 20, longiora 3 mm. longa, antheris ut videtur sterilibus; styli 5, raro 4, 2.5-3 mm. longi, staminibus paullo breviora, ad medium ovarii liberi basi villosi, hypostylio medio fere ad basin villosi; ovarium apice dense villosum, 4-5-loculare, loculis in parietie exteriori manifeste costata costa post anthesin in lamellam crassam ad medium loculum prominentem accrescente, ideo fructus imperfecte 8-10-loculatus. Fructus subglobosus vel globoso-ovoidea, 6-8 mm. diam., in sicco atro-coerulea, pruinosa, in vivo (sec. collectorem) rubra, coeruleo-pruinosa, sepalis persistentibus erectis ovato-lanceolatis circiter 4 mm. longis coronatus; semina pauca perfecta, ellipsoidea, compressa, circiter 4 mm. longa, castanea.

IDAHO: summit of Elk Butte, Clearwater County, alt. about 2000 m., *J. G. Jack*, no. 1329, September 4, 1918. Cultivated specimens: Arnold Arb. (from seed of no. 1329) under no. 17688, September 20, 1923, and May 19, 1925.

This interesting hybrid was discovered by Professor *J. G. Jack* in Idaho on the open and rocky summit of Elk Butte. In general appearance the original specimens as well as the plants growing in the Arnold Arboretum have the aspect of a vigorous plant of *Amelanchier*, and only on closer inspection one may notice the presence of partly pinnate leaves and the compound inflorescence. The flowers, too, with their oblong upright petals look much like those of *Amelanchier*, but the styles are distinct, and the false partitions of the fruit extend only to about the middle of the locule and are abnormally thick in the sterile cells.

The parents of the hybrid are apparently *Sorbus sitchensis* Roem. and *Amelanchier florida* Lindl. of which specimens were collected on the same date at the same locality; the first species being represented by *Jack's* no. 1333 and the second by his no. 1332. From *Sorbus sitchensis* the hybrid is easily distinguished by the mostly simple leaves, smaller, not viscid winterbuds, the smaller paniculate inflorescence with racemose not corymbose branches, the oblong petals, 4-5 styles, and by the dark colored pruinose fruit with long ovate-lanceolate sepals. From *Amelanchier florida* the hybrid differs chiefly in the larger, more coarsely serrate and occasionally partly pinnate or lobed leaves, in the villous apex of the bud-scales, in the compound inflorescence, shorter petals, distinct styles and in the larger fruit with upright or nearly upright sepals, with shorter

false partitions and with dry flesh of poor flavor as noted by the collector.

Several bigeneric hybrids have been recorded in the subfamily Pomoideae of Rosaceae, as between *Crataegus* and *Mespilus*, *Pyrus* and *Sorbus*, *Sorbus* and *Aronia*, but all these genera are close allies and the four last named are considered by some botanists congeneric, while *Amelanchier* and *Sorbus* are much less closely related and differ widely in the type of the inflorescence and in the structure of the ovary which in *Amelanchier* has false septa like *Peraphyllum*; in this respect these two genera differ from all other genera of the subfamily. The distinct types of the inflorescence and the difference in the structure of the ovary produce in the hybrid a peculiar combination; also those leaves of the hybrid which are partly pinnate are of irregular and more or less monstrous shape and resemble those of the hybrids between *Aronia* and the section *Aucuparia* of *Sorbus*, two genera otherwise very closely related.

THE RHODODENDRONS OF EASTERN CHINA, THE BONIN AND LIUKIU ISLANDS AND OF FORMOSA.

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In this article the territory embraced lies between Latitudes 19° and 34° N. and Longitude 113° and 142° E. and in the south includes the island of Hainan. Much of the region is very little known to the western world. A glance at a good map of the Orient shows off the coast of China a string of islands stretching southward like stepping stones from Japan toward the Equator. They may be likened to a rope of unmatched pearls with Formosa athwart the Tropic of Cancer forming the pendant. All these islands, some little more than mere rocks thrust above the ocean, others of fair size, are now an integral part of the Japanese Empire. They are little known and very few botanists other than Japanese have had opportunity of visiting them. More fortunate than many it has been my privilege to tread their shores. Bonin and Liukiu I botanised in the spring of 1917; Formosa in the early spring and autumn of 1918. These islands enjoy a warm-temperate or almost tropical climate varying somewhat according to their latitudinal positions but all are lapped by the waters of the warm Japan Gulf stream. Formosa has a backbone of mountains whose higher peaks average over 10,000 ft. in height and in consequence boasts cool temperate regions. They support a luxuriant vegetation, largely endemic, with a coastal fringe of widespread subtropical species. Only a few plants indigenous to these islands are in cultivation but we are indebted to Liukiu for the well-known *Cycas revoluta* L. and the indispensable *Lilium longiflorum* Thunb. which long ago reached us by way of Japan.

The flora of the Bonin Islands is very largely endemic; that of Liukiu is related to the flora of Japan; the mountain flora of Formosa shows